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SCHOOL AND SOCIETY

Volume XV | Saturday, March 25, 1922 | Number 378

GEOGRAPHY AND WORLD RELATIONS[1]

All thoughtful people appreciate that the closing of the world war did not bring about world peace. In many countries there are political questions which are extremely difficult to solve; in most of the world there is an unstable economic condition; in many countries there is social unrest; in certain parts of the world, there is great and widespread suffering; famine exists in two somewhat densely populated sections, where millions of people will die from starvation during the present winter.

The seriousness of the situation naturally has at first a depressing influence upon us. The appeals come from all sections near and far,—from local organizations that are trying to relieve suffering in our home communities, from national and international organizations. Each organization reports conditions that are indeed pathetic, and makes a strong appeal for help.

In seeking for an explanation of conditions in the world today, some turn very naturally to the great war and endeavor to explain all the evils from which the world is now suffering by that fearful catastrophy. Undoubtedly the world war hastened these deplorable conditions; undoubtedly, it is the immediate cause of much of the suffering, especially in Europe; undoubtedly, it is the immediate cause for our present depression in industries, but I wish to call attention in this address to some other factors which I think are more fundamental, which have had and will continue to have a profound influence upon the economic, and indirectly upon the social conditions in this world.

[1] Presidential address, National Council of Geography Teachers, Washington, D. C., December 28, 1921.

LANDS AND NATURAL RESOURCES APPROPRIATED

For the first time in the history of the world we find the lands, and most of the natural resources of this earth that are useful to man, appropriated. The resources are not exhausted, but they are now in the possession of one nation or another, and very largely in the possession of individuals. There are but few opportunities for individuals in this or any other country, suitable for habitation by enlightened people, to extend their fences without trespassing upon the possessions of others. No opportunity is left for any nation to expand without intruding upon the rights of some other nations.

There are too many people living on the plains of China, in the valley of the Ganges, in parts of Japan, in southeastern Russia, in parts of western Europe, in certain sections of tropical Africa, for safety in the struggle for existence. Certain of these crowded populations may live with reasonable happiness when the climate is favorable and large crops are secured. In certain other crowded sections, the living conditions are comfortable when the world is at peace and there is a free exchange of manufactured and of raw commodities. However, when an off-year in the production of food crops comes, or there is a period of depres-

sion in foreign trade, many of the people in the crowded communities face the danger of starvation.

In 1798, Malthus emphasized and predicted the serious problems which would come with the increase in population in the world. Perhaps his ideas were not given sufficient and careful consideration at the time. Certainly his doctrines have not greatly disturbed the people in the Western Hemisphere. We have not yet been willing to be disturbed by the problems of over-population. We had wonderful lands that people could have for the asking. We had our coal, our oil, our gas, our forests, our building stones, all ready for those who would ask for them. We were solving, and have been solving up to the present, many of our problems as a nation through expansion, through appropriation of more lands, of more resources. Some may urge that we have not yet reached the limit in our power of expansion; that is true, but only to a slight extent. Those who seek farmlands, in the areas owned by our government today, will find it difficult to locate an area suitable for farming, on which they can make a living, without considerable outlay of capital. Some may turn to Alaska, but those who know that distant territory appreciate that relatively few people will ever make permanent homes in that part of the world. We have about reached the stage in our development as a nation when we must solve our problems in some other way than through expansion and appropriation of more territory.

INCREASE IN POPULATION OF THE WORLD

The population of the earth to-day may be roughly estimated at 1,700,000,000 people, or seventeen hundred millions. During the last one hundred years it has increased by nearly one thousand million. From the record of the last half century, we may anticipate an increase during the next half century of about one hundred million with each decade. In the United States, the population has increased in the last century about 95,000,000.

Thus the increase in world population in each decade is about equal to the present population of the United States. Estimates have been made that the United States might provide homes and good living conditions for 200,000,000. At the present rate of increase in our population that figure will certainly be reached within fifty years.

GROWTH OF INDUSTRIALISM

Since the middle of the last century, the highly civilized nations of the world have developed an industrial life which is drawing upon the fuel and mineral supplies in the world as those resources have never been drawn upon before. This great wave of industrialism came most naturally as men were struggling to meet the problems of existence. Large communities of people in western Europe, and more recently in eastern United States, found the opportunity of making a living through manufacturing more attractive than the opportunities that came through agriculture, or fishing, or hunting. Industrialism has for a time solved the problem for Germany, for Belgium, for England, for New England, and for parts of our Middle Atlantic States, for large communities around Pittsburgh, Cleveland, Detroit, Chicago, and St. Louis. The Japanese adopted this same plan for solving their problem of existence, and they look forward very properly to this means of solving their problem of existence to-day and to-morrow.

EXHAUSTION OF CERTAIN NATURAL RESOURCES

This great drive upon natural resources, upon the fuels and the different useful minerals, is leading to the exploitation of those resources, and can not but lead to depletion and final exhaustion. Such resources, as we well understand, were formed very slowly in the history of

this earth. It took geologic periods—or sometimes eras—for the soils to be formed. Man has received a remarkable inheritance of great wealth, and yet he has but recently come to appreciate that this wealth is limited. He is just learning that some of this wealth, when once used, is gone forever. We have figures which, though they may not be absolutely correct, may be within a reasonable degree correct. Possibly the known oil and gas resources of the United States may be exhausted in fifty years. Possibly, and quite probably, other oil resources will be discovered, and undoubtedly methods for recovering more of the oil from the ground will be perfected; but we should frankly face the situation that, with each oil field discovered and exploited, there is just so much less to be discovered and used. With the present rate in the increase in the use of iron, the known resources of high grade iron ore in this country may be exhausted within twenty-five years. With proper methods of conservation, with the use of substitutes for iron, and with the possible decrease in the demand for great iron structures, now that the railroads, the cities, the bridges, are so well constructed, the life of our present known iron resources in this country may be extended to ninety years. Even if these figures are not correct, even if they are to be doubled, the life of these resources, as compared to the prospective life of the nation, is very, very brief. In the distant parts of the world there are large iron resources not yet exhausted, but most of them are being drawn upon by the ever increasing growth of industrial enterprises, so that their exhaustion may soon be predicted with considerable accuracy.

We and the people of some other nations are extravagant in the use of copper, lead, zinc, and other metals, and along with many other people we have been shamefully wasteful of our timber resources.

DEVELOPMENT OF THE NATURAL SCIENCES

Along with our modern civilization has come, during the last century, the remarkable development of the natural sciences which has added more to man's power over nature than has all the progress made in the previous history of man upon this earth. That power makes possible the more rapid development of the industrial life, which leads to the greater use of our natural resources. It has brought many comforts to man and it has brought a power of destruction which, when used, produces, as we have well experienced during the last few years, fearful results.

IMPROVED MEANS FOR TRAVEL AND COMMUNICATION

Associated with the development of the sciences in the last century, there has come an equally remarkable development in technology. Distance has almost been eliminated from our problems. The world has grown smaller and smaller, as new methods of transportation have been perfected. Rapidly moving locomotives and steamships are in use, and rapidly moving motor vehicles including the aeroplane are now available. The world is made smallest perhaps through the development of means of communication, until to-day word may be sent from our Atlantic seaboard—by waves sent through the air—completely around the world. They travel to the most distant parts in so short a time that we may think of it as almost instantaneous. The cables, the telegraph and telephone wires form a network of lines of communication and with the mail service give to most people ready means of communication with practically all communities in the civilized world. This network is so interwoven that the leading nations of the world to-day appreciate their common interest in the means of communication. International relations must be established for the use of cables and cable

stations, and even international understandings must be established as to the length of the waves used by the respective nations and different stations in sending messages through the air.

GROWTH OF WORLD TRADE

Among all civilized peoples of the world, demands have come for commodities from other countries. We are not satisfied at our breakfast table without goods from the tropics. We are not satisfied in our homes without goods that have been imported from Europe, from Asia Minor, or possibly from the Far East. Raw materials are brought from the most distant parts of the world to be used in the manufacture of commodities in certain of our great industrial plants. We are to-day vitally interested in industrial and economic conditions in all other parts of the world where enlightened people are living. If the shearers have any serious differences with the ranchmen of Australia, the wool-clip may be decreased. That decrease in wool-clip will be known in the markets of western Europe and in New England almost instantaneously, and the price of raw wool will at once rise in the New York and Boston markets. With that the price of woolen cloth will be increased, and very soon we shall find that a suit of clothes will cost more. The farmer who is producing wheat in one of the great interior states may find a market for all but 20 per cent. of his product in this country, and the price of that last 20 per cent. may be determined by the market in Liverpool. It is often the case that the sale of that last fraction of the production determines, for the individual farmer or manufacturer, whether he will have a profit or a loss.

Our foreign trade is about 10 to 15 per cent. of our total trade, but it has been estimated that we can produce of manufactured goods forty per cent. more than we need in this country. If all of our people are to be kept employed, a large fraction of that forty per cent. must be produced, and sold in distant lands. From this line of thought we come again to appreciate that friendly relations with other peoples of the world are very significant. It is highly important that every American citizen appreciates that foreign trade is absolutely essential to our best industrial and economic development. The world is an economic unit. This will undoubtedly be clearly demonstrated at the coming economic conference at Genoa.

POLITICAL AND SOCIAL RELATIONS

A League of Nations has been formed in which forty-one different countries are represented. A treaty has recently been drawn up in this country by the representatives of four of the more powerful nations of the world. Thus we find from the political standpoint a greater and greater tendency towards unity. I believe there is among the American people a very general recognition that there are many interests which the various nations of the world have in common.

With the development of rapid and comfortable means of travel, and with the development of great wealth, more and more people have traveled extensively, and more and more are looking forward to travel for education and for pleasure. There is sure to come a greater social unity among the different peoples of the world. Just as through an exchange of commodities the world has become an economic unit, so by an exchange of ideas and of customs it may become to some extent a social unit.

For all of these reasons and possibly many others, I believe we should recognize that the present conditions on this earth are due to a long period of development, not simply to the last war. They may be but the natural result of the increase in

population, and the increase in our knowledge through the development of the sciences and of technology.

BEARING ON THE TEACHING OF GEOGRAPHY

If we turn now to the bearing of these considerations upon ourselves, a group of educators especially interested in geography, I submit that there is no influence which can help us so much to meet these changing conditions as sound education. I submit further that in the end the solution of these problems can come only through the development of the proper public sentiment toward them. Where then in the field of public usefulness, at a time when this country and all countries of the world are facing international questions, world-wide questions of trade, of communication, of political and social relations, of peace, does the task of the geographer lie?

Perhaps each one has instantaneously answered that question. Perhaps it is unnecessary for me to say anything further. As a group of educators, and students of geography, it seems that our place is clearly marked, our responsibility well defined.

There never was a time in the history of this country, or in the history of the world, when the study of the various peoples of the world, and the geographic conditions influencing their lives, directing their plans as they seek for means of existence, should be taught so thoroughly as to-day. The responsibility is before us. I trust we shall rise to it, and in every center have greater opportunities to perform this service.

I submit that there is no subject in the elementary school curriculum that so naturally and so necessarily deals with the large world-wide problems of to-day as geography. There is no subject in the school curriculum that can so appropriately deal with the actual living conditions in the different parts of the world at the present time as geography. It is pre-eminently fitting and proper that we take over a large part of the responsibility of educating the young people of this country to an appreciation of present conditions throughout the world. I believe no group of educators has a more important responsibility.

Our economic prosperity, our democratic institutions, our peaceful existence, will depend upon the relations which we establish and maintain with foreign peoples. Probably every national election, from now on, in this country, will present some international question.

GENERAL AWAKENING OF INTEREST IN GEOGRAPHY

It is, indeed, most encouraging to find the leading spirits here at the national capital, the greatest business men—who have developed our large American industries—our bankers, who maintain relationships with all parts of the world, appreciating the subject of geography as never before. It is encouraging to find several of the universities of this country, many of the colleges, *all* of the normal schools, and *all* of the public schools recognizing this field of education in their curricula. Calls are now coming as they never came before for expert geographers. Universities, formerly not concerned with geography, are ready to establish departments of geography; a school of foreign trade has been established; schools of commerce and business administration are asking for more geographic information and more trained geographers. The newspapers, the magazines, are all giving more and more space to articles bearing upon conditions in foreign lands and in the various portions of this land, and just now a great project is under consideration by a very able group of men, looking to the promotion of an international publishing plan.

As geographers, we have no reason to feel

discouraged; we have every reason to feel and act as most encouraged. There has been a great awakening among the American people of a real interest in geography. The magazine edited in this building demonstrates that interest to a remarkable extent. Our own organization, national in its scope, with thirty-two state branches, reflects again an interest, not only in geography, but in the teaching of geography. We need more trained geographers, more who have had an opportunity to receive university training in geology, physiography, climatology, agriculture, history, economics, sociology, and yet throughout their period of training have held clearly defined before them the intention of organizing their special information so as to develop a world-wide knowledge of living conditions. We need more geographers who have had an opportunity to see the world, to go further than libraries and class rooms, more who have gone directly to the homes of distant people and come to know them, who have gone frequently to the homes of those people and have continued to know them. We need better text-books right through our system of education. There is little yet available for the colleges and normal schools. There is too little available for the high schools.

IMPORTANCE OF ORGANIZATION OF SUBJECT MATTER

All along the line from the work done with the littlest of children to that done with the graduate student, there should be in the teaching of American geography a thoroughly scientific spirit. It is indeed a subject in which we deal with facts, in which we must recognize natural laws.

In addition to the organization of the subject matter on a truly scientific basis, we must have an organization of the material on a truly sound educational basis, so that it may be presented, or used, with maximum effectiveness in the training of the minds and characters of all students. There is no study in the elementary school curriculum, other than geography, in which the scientific method of thinking can be so easily and so appropriately taught, in which a knowledge of conditions throughout the world can be so well gained, in which an intelligent sympathy with the other peoples of the world can be so well taught, and true citizenship of this nation, and a broad-minded, noble citizenship of the world can be so well emphasized.

AN INSPIRATION TO TEACH

When, as teachers of geography, we survey the world conditions of today and consider the problems that this nation and other nations are attempting to solve, when we endeavor to look a little into the future and anticipate some of the problems which the children of today must almost certainly face, the responsibility which we must assume in training the children furnishes to us a wonderful inspiration. Each day's work should be guided by the hope that by human endeavor this earth may become a safer, better, and happier home for each succeeding generation. Remember our work is with and for the children; when they have been *better trained*, they will improve the living conditions in this world.

Wallace W. Atwood
Clark University

THE DIVISION OF SCHOOL HYGIENE OF THE UNITED STATES BUREAU OF EDUCATION

The federal government has many bureaus which engage in activities affecting public health. In fact, there are such bureaus in every department under a cabinet officer, besides a number in the independent executive establishments. There are in all thirty-six divisions of the government which are concerned, directly or

indirectly, with some phase of public health. Of course, the health work is a major activity in only a few instances; in most cases it is of minor interest in the broad scope of the particular bureau. The most important of the government health agencies is, obviously, the Public Health Service, which, for some incongruous reason, is in the Treasury Department. Other prominent bureaus which do health work are the Children's Bureau in the Department of Labor, the Division of Vital Statistics of the Bureau of the Census (Commerce Department), the Bureau of Indian Affairs in the Interior Department, the States Relations Service, Bureau of Chemistry, and Bureau of Animal Industry in the Department of Agriculture, the Interdepartmental Social Hygiene Board, the United States Veterans' Bureau, and the Division of School Hygiene of the Bureau of Education.

In order that its members and other persons interested in this subject may be familiar with the scope of these various government health activities, the National Health Council, Washington, D. C., has prepared a chart showing the thirty-six bureaus, together with an explanation, which outlines the functions of each bureau, gives its appropriations for 1922, and the name of the director. The National Health Council has also issued reports describing four of the more important bureaus. Included in these reports is an outline of the legal authority, history and development of the bureau, its current activities, organization and personnel, appropriations, and cooperation with other agencies. The reports published to date, which may be obtained without charge from the Washington office of the National Health Council, include: The Division of Vital Statistics of the Bureau of the Census; the Children's Bureau; the Women's Bureau; and the Division of School Hygiene of the Bureau of Education. Since the activities of this last named division are of interest to educators, the report concerning it is herewith given in SCHOOL AND SOCIETY. It has been read and approved by Dr. W. S. Small, director of the Division of School Hygiene, and by Dr. D. B. Armstrong, executive officer of the National Health Council.[1]

1. HISTORY AND DEVELOPMENT OF THE DIVISION OF SCHOOL HYGIENE

The Division of School Hygiene was created in the United States Bureau of Education of the Interior Department by an order of the Commissioner of Education, P. P. Claxton, dated October 19, 1912. This administrative order was made possible by the provision in the appropriation act for 1911-12 of an appropriation for "investigation of rural education, industrial education and school hygiene."

The scope and purposes of the Division of School Hygiene were outlined by the commissioner of education in his annual report for the fiscal year ending June 30, 1912, as follows:

1. To furnish to all who seek it information regarding the sanitary construction of school buildings.

2. To bring together at the bureau information relating to school hygiene and sanitation and to render this information accessible to school authorities and all others interested.

3. To gather and prepare for publication information concerning the hygienic condition of

[1] The National Health Council is composed of the following organizations: American Public Health Association; American Red Cross; American Social Hygiene Association; American Society for the Control of Cancer; Conference of State and Provincial Health Authorities of North America; Council on Health and Public Instruction of the American Medical Association; National Child Health Council, including the American Child Hygiene Association, Child Health Organization of America, National Child Labor Committee; National Committee for Mental Hygiene; National Organization for Public Health Nursing; National Tuberculosis Association; United States Public Health Service as Conference Member.

school buildings and grounds throughout the country.

4. To conduct all correspondence referred to it wherein advice and information are sought on matters of school hygiene and school sanitation.

5. To prepare bulletins on such special topics as the commissioner may from time to time direct.

6. To direct such cooperative invesigations as shall be made in connection with the bureau on matters relating to the hygiene of the school children.

7. To compile and send out bibliographies on special topics in school hygiene, school sanitation, and medical inspection.

8. To assist in any work connected with the bureau which the commissioner may see fit to assign to the division.

During the first three years of the existence of the division (1912, 1913 and 1914), in which time there was a full time specialist in charge for one year only, the work undertaken consisted of answering correspondence, giving out information, compilation of bibliographies, preparation of exhibits on school hygiene for the Fifteenth International Congress on Hygiene and Demography and the Fourth International Congress on School Hygiene, a survey of hygienic conditions of rural school houses, and the preparation for lending purposes of cardboard models of three types of school houses.

In the following three years (1915, 1916 and 1917) the division had the part time services of two special agents, one in Washington and the other in Nashville, Tennessee. The former conducted correspondence, edited bulletins and prepared annual surveys of progress in educational hygiene. The latter did much work throughout the country on school architecture and in helping in surveys of rural schools. A bulletin on open air schools was prepared in collaboration with Sherman C. Kingsley of the Elizabeth McCormick Memorial Fund. Other bulletins on Medical Inspection in England, Physical Growth and School Progress, School House Sanitation, and Physical Education in Secondary Schools were also issued.

In 1918 the division again had a full-time specialist in charge for the first time since 1912. In addition to continuing its routine duties as outlined above, the division did much work on physical education. On February 26, 1918, a conference was held in Atlantic City under the auspices of the Bureau of Education for the purpose of discussing ways and means of promoting a nation-wide movement to establish physical education, including health instruction and training as a part of the education of all children. As a result of this and subsequent conferences, the Playground and Recreation Association of America created a National Physical Education Service, with an office in Washington, for the specific purpose of promoting state and federal legislation for physical education. An annual conference on physical education, under the auspices of the division, has been held each succeeding year in affiliation with the Department of Superintendence of the National Education Association. In the appropriation act passed for 1918, physical education was included with rural education, industrial education and school hygiene.

Other activities by the division during this year included cooperation with a number of war-time committees. In cooperation with the Medical Section of the Council of National Defense, a pamphlet on sex education for high school boys entitled "Keeping Fit" was prepared and issued. An analytical summary of state laws on physical education was also issued.

In 1919, besides the full-time specialist in charge, and a part-time state agent on schoolhouse construction and sanitation, there was added a full-time assistant in health education. Temporarily, there was some field assistance. Among studies and surveys made or participated in during this year and the following year were the

surveys of the school system of the State of Alabama and the city of Memphis, and studies of physical education in normal schools, school health supervision and janitor service in city schools.

For several years beginning in the late fall of 1918, the bureau has had the active assistance of the Child Health Organization of America. This association was formed in the spring of 1918 as a branch of the National Child Labor Committee, primarily for the purpose of studying malnutrition among school children. It later became independent and, at the request of the secretary of the interior, gave assistance to the Bureau of Education. Until July, 1919, the director of the Child Health Organization acted as special collaborator and office assistance was supplied by the Child Health Organization. Five publications in editions of nearly a million were issued during the first year. The special appropriation for the printing was made from the President's War Emergency Fund. These formed the Health Education Series.[2] During the second year, two pamphlets were added to this series,[3] and the actual sale of them was begun by the Government Printing Office. The total sales from the Printing Office amounted to 189,075 in the fiscal year 1919-20. Two additional pamphlets appeared in the third year[4] and the sales from the Printing Office rose to 373,621. Since July, 1921, there has been one additional pamphlet[5] and the sales have been large—200,000 of one alone, the Class Room Weight Record, in three months. Besides the pamphlets, the series includes this class-room weight record and several posters.[6]

During 1920 and 1921, in addition to the health education enumerated in the preceding paragraphs, the division has carried on its routine activities. The specialist of the division was assigned to the educational division of the Interdepartmental Social Hygiene Board. The scope of the correspondence of the division is shown by the fact that 11,475 letters were received in one year. Considerable field work was done in 1921 in connection with health teaching. Nine health supplements were prepared for *School Life*, the current publication of the Bureau of Education. Other activities included the continuation of advice and information with respect to school construction and sanitation, and physical education. Close relations are maintained with state supervisors of physical education, of whom there are now 13. There were none in 1915.

There is now pending before Congress a bill, which, if passed would greatly increase the scope of the work of the Bureau of Education, probably through the Division of School Hygiene. This is the so-called Fess-Capper Physical Education Bill (S. 416, H. R. 22) which was introduced last April (1921) when Congress convened in special session. The purpose of the bill is to provide for the promotion of physical education in the United States through cooperation with the states in the preparation and payment of supervisors and teachers of physical education, including health supervisors and school nurses. A sum of $10,000,000 would

[2] No. 1, Wanted, teachers to enlist for child health service; No. 2, Diet for the school child; No. 3, Summer health and play school; No. 4, Methods of teaching health; No. 5, Child Health program.

[3] No. 6, Further steps in teaching health; No. 7, The lunch hour at school.

[4] No. 8, Health training for teachers; No. 9, Your opportunity in the schools.

[5] No. 10, Suggestions for a program for health teaching in the elementary schools.

[6] No. 1, Health, Strength, Joy; No. 2, Right Height and Weight for Girls; No. 3, Right Height and Weight for Boys; Card 1, What is Health?; Card 2, Rules of the Game.

be appropriated for this purpose for the fiscal year ending June 30, 1922, and for each subsequent year an amount sufficient to allot $1.00 per child of school age to each state accepting the provisions of the act. The Bureau of Education of the Department of the Interior would establish a Division of Physical Education to administer the act, and $200,000 is allowed to the United States Public Health Service to carry out certain cooperative, research, and demonstration phases of the work. No action has been taken on the bill.[7]

ORGANIZATION AND PERSONNEL

The Division of School Hygiene has never had a large personnel. The greatest number of persons employed was in 1919 when there were five members of the staff, including two special collaborators, not paid out of bureau funds. During its first year it had the services of a full-time specialist, but from 1913 to 1918 it had only the part-time services of two special agents and the full-time services of one clerk. At present, there is a full-time specialist in charge, a full-time assistant, a full-time clerk, all in Washington, and a part-time special agent in Nashville. The present director is W. S. Small, Ph.D., who has been connected with the division since 1915, as special agent from 1915-18, and as specialist in charge since 1918. The part-time specialist in Nashville is F. B. Dresslar, Ph.D., who was the specialist in charge in 1912, and has served as special agent since that time.

The expenses of the Division of School Hygiene have been paid out of a lump sum allotted to the Bureau of Education for the investigation of rural education, industrial education, physical education and school hygiene. The total appropriations have never been large and the proportion which could be expended on school hygiene has consequently been comparatively slight. The largest expenditure was in the year 1919-20 when there was expended for salaries $6,046.19 and for printing, about $15,000. The expenses for the present year are approximately $7,300 for salaries and $5,000 for printing.

COOPERATION WITH OTHER ORGANIZATIONS

The division has always attempted to cooperate with other organizations interested in school sanitation, physical education, educational hygiene, and general health education. The work with the Child Health Organization of America has already been outlined, and the cooperation with the National Physical Education Service has been indicated. Among other associations with which the division has been in close touch are the National Tuberculosis Association, through the modern health crusade; the American Red Cross through the Junior Red Cross; the American Public Health Association, through the committee on closing schools during epidemics; the Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association; the National Child Health Council through the committee on Health Provisions for State Laws Relating to Children and the committee on Health Education; the American Physical Education Association through membership in the Council, and such government bureaus as the Interdepartmental Social Hygiene Board, the Public Health Service, and the Children's Bureau. The specialist in school hygiene by official designation is special consultant of the Interdepartmental Social Hygiene Board and the adviser to the Public Health Service in sex education as related to schools.

The cooperation rendered by the division in the preparation of this National

[7] For reports on the introduction and progress of all bills relating to national health, see the Bi-Weekly Legislative Statements of the National Health Council.

Health Council report has been indicated in the introduction to this article.

JAMES A. TOBEY
NATIONAL HEALTH COUNCIL,
WASHINGTON, D. C.

HOW MUCH EDUCATION HAVE THE AMERICAN PEOPLE?

(Concluded from the preceding issue)

II.

To appreciate the extent to which education has been socialized in our democracy we might compare the proportion of our people who go into the high school grades with the proportions in corresponding grades in foreign countries. A comparison is not easy to make because of the variations in educational arrangements even within one European country. The following table gives estimates based on the latest European figures obtained and compared with the situation at corresponding dates (and other dates) in the United States:

Before trying to interpret this array some qualifications should be made. Calculations for Germany and France are based on definite facts by methods explained in the note at the conclusion of this article. Those for England and Wales and several other countries are more conjectural. In general the European figures probably represent the situation in the dominant types of schools and not all the schools. In the case of England and Wales, Miss Smith's[5] estimate for a total is about 50 per cent. greater than the official figures employed here.

Considerable additions could probably be made for industrial and commercial schools of secondary grade in central European countries. This addition would be largest of all for Germany; possibly it would double the German figures, and Sweden

[5] *Annual Report of U. S. Bureau of Education*, 1916, Vol. I, page 677.

RATIOS OF ENROLLMENTS IN UPPER FOUR YEARS (HIGH SCHOOL) TO ESTIMATED FOUR-YEAR AGE POPULATIONS

NATION	Enrollment Upper Four Years	Date	Estimated Four-Year Age Population	Date	Ratio Four-Year Enrollment to Four-Year Population
United States	80,227	1870	2,930,436	1870	2.7
	202,963	1890	4,759,288	1890	4.2
	635,808	1904	6,174,332	1904	10.3
	984,677	1911	7,128,230	1911	13.8
	1,105,360	1912	7,251,198	1912	15.2
	1,134,771	1913	7,374,165	1913	15.3
	1,218,804	1914	7,497,133	1914	16.2
	1,328,984	1915	7,630,308	1915	17.4
	1,645,171	1918	7,999,252	1918	20.5
England and Wales	120,266	1915	3,037,012	1915	3.9
Scotland	32,942	1914	360,784	1914	9.1
Ireland	14,348	1901	332,986	1914	4.3
France	72,328	1913	3,009,714	1911	2.4
Belgium	14,362	1912	575,425	1912	2.5
Germany	83,126	1911	4,934,304	1910	1.7
Austria	44,465	1911	2,203,684	1912	2.0
Hungary	24,785	1912	1,587,373	1910	1.5
Switzerland	6,457	1912	291,172	1912	2.2
Netherlands	12,459	1913	472,165	1913	2.6
Denmark	11,426	1911	210,905	1911	5.4
Norway	7,373	1912	181,775	1910	4.5
Sweden	6,164	1912	431,650	1914	1.4
Italy	19,670	1911	2,705,431	1914	.7
Spain	16,667	1913	1,519,653	1910	1.1
Russia	128,249	1911	12,457,844	1911	1.3
Japan	54,070	1914	2,899,630	1912	1.8

seems to approximate the educational situation of Germany. Moreover, European countries do more for their boys than their girls, and a comparison based on boys alone would give Europe a better showing. The Germans[6] enroll about 61 boys to 39 girls, the French[6] 72 boys to 28 girls, the English[5] 54 boys to 46 girls.

But, when all is said and every possible allowance made, the contrast with the United States is startling. However efficient the German secondary schools may have been in what they did, they could not have been enrolling more than a fourth as large a proportion of the people at the time of their latest report as was the United States. Germany was admittedly autocratic and did not desire advanced education for the masses. But France, with its republican form of government, has never had democratic education either. England in 1915 was about where we were in 1890 as regards secondary school enrollments. On the underlying social causes Inglis[7] remarks, "The situation in England at the present day is somewhat analogous to the situation in the United States in the middle of the nineteenth century when the public high school was in the midst of its struggle for supremacy with the private academy." We may well believe that all the European countries are moving educationally in the direction in which we have gone but that they are roughly half a century behind us in the particular aspect of educational conditions examined in this article, viz.: that degree of socialization of education that is reflected in the proportion of people getting secondary education.

So high are the figures in certain favored cities in the United States that the question may suggest itself whether a "saturation point" is being reached in some localities beyond which further increase is not to be looked for. According to Terman and Proctor 70 per cent. of high school pupils with intelligence quotients as low as 95 fail in more than half their studies.[8] We may interpret this to mean that high school instruction as now constituted will probably pay pupils having an intelligence quotient of 95 or higher but not those below. And they further find that about 25 per cent. of the first year high school pupils have intelligence quotients of 95 or less. Accordingly only pupils with a high school percentile rank of 25 or higher may be expected to make a success of high school work. The question is what percentile rank in the general population would correspond to a high school percentile rank of 25. According to estimates of the writer, based on an examination of army scores and high school scores in Army and Otis tests, a high school percentile rank of 25 would correspond approximately to a percentile rank of about 33 in the general population; or, in other words, three fourths of high school pupils have intelligence as great as a person one third way up the intelligence scale of the general population. If Terman's opinion is true that only the upper three fourths in the scale of high school intelligence can succeed in high school work, then it would seem to follow that only about two thirds of the general population have the requisite degree of intelligence to profit by high school instruction as now constituted.

We may compare this two thirds with the proportion actually found in a maximum city:

[6] Inglis, *Principles of Secondary Education*, pages 220, 242.

[7] Inglis, *Principles of Secondary Education*, page 252.

[8] Terman, *The Intelligence of School Children*, pages 90 and 80.

Grade	Proportion capable of profiting by H.S. work	Proportion enrolled in maximum city, 1918
I	66.6	72.5
II	66.6	42.7
III	66.6	32.4
IV	66.6	24.5
All H.S.	66.6	43.4

Apparently the first year is already enrolling as many as may be expected but further retention may be looked for in the upper years, possible to the extent of doubling the third and fourth year enrollments now found under the most favorable conditions. We have cities now in which practically everybody who could profit by high school education is receiving "some" high school education. But after starting we have essentially a competition between the attractions of outside, practical, remunerative employment and inside, more or less theoretical, and academic preparation and improvement. On enrollment for the whole four years no city yet realizes more than about two thirds its potentiality; and on the final year alone no city realizes more than about two fifths. Under the most favorable conditions we are already enrolling two thirds as many high school pupils as can be expected; the other third remains as a margin and possible source of still further increase. Where conditions have been less favorable the opportunities for future increase are, of course, greater. Moreover, if curriculum additions or reorganizations bring subject matter within range of lower levels of intelligence, naturally still further increase in upper year enrollments would become a possibility.

Note on sources of information and methods of estimating.—Age population will be found in the *Thirteenth Census* (1910) *Population*, Volume I, page 310. The percentages of the various years of age have been "smoothed" by the writer to one tenth of one per cent. The percentage proportions of 1910 are assumed to hold for all the dates, because, for the United States as a whole, the variation from one decade to another is small. Ages from the 1920 census have not yet been published.[9] The age percentages employed were: Seven years, 2.1; eight years to 12 years, 2.0; thirteen years to eighteen years, 1.9 (for each year).

The total population of the United States in the different years is estimated by the Bureau of the Census and quoted in the annual reports of the U. S. Bureau of Education, in the *Statistical Abstract of the United States*, and elsewhere. These totals for different years have been multiplied by the 1910 percentages to get the estimated age populations. For Seattle the actual 1918 school census age figures and 1918 grade enrollments have been ascertained by direct inquiry. The same is true for Toledo except that the school census figures were grouped and had to be distributed to separate years by the writer in accordance with the age proportions of the United States.

Grade enrollments were compiled by the U. S. Bureau of Education in 1918 and 1911. On the basis of the percentages of those years the bureau estimated the grade distribution for the intervening years.[10] The writer, by drawing graphs, has extended this backward as far as the year 1900, that is, has followed the trend back, giving the following percentage distribution (intermediate years omitted):

PERCENTAGES IN GRADES

Grade	1900 (Byrne)	1911 (U. S. Bur.)	1918 (U. S. Bur.)
1	25.4	23.5	22.2
2	16.2	14.8	13.9
3	14.7	13.9	13.5
4	13.6	13.3	13.1
5	11.0	11.3	11.5
6	7.8	9.2	10.1
7	6.5	7.6	8.2
8	4.8	6.4	7.5
I	45.9	42.8	39.8
II	27.3	26.7	26.9
III	16.9	18.0	18.8
IV	9.9	12.5	14.5

[9] Since this paragraph was written the U. S. Bureau of the Census has published figures on five year age divisions for 1920. They are not appreciably different from those of 1910, so far as concerns this study, but I may say that they point to populations of high school ages of slightly smaller proportions than those used here. Consequently they would make high school enrollment ratios slightly higher if used.

[10] U. S. Bureau of Education Bulletin, 1920, No. 11, *Statistics of State School Systems, 1917-1918*, page 28.

For still earlier dates (1890 and 1870) the percentage distribution of 1900 has been employed as a probable approximation.

The total elementary and high school enrollments to which grade percentage distributions have been applied are the unaltered totals as published in the annual reports of the U. S. Bureau of Education. In studying the 1918 distribution Mr. H. R. Bonner, the bureau statistician, employed what he called an "estimated true enrollment," in which he took account of the "unreported" and other factors. The present writer, however, has used for every year named the actual reported number without change, merely distributing the total in accordance with the theoretical per cents. by grades. Thus the assignment to a particular grade is in some degree speculative, but the apportionment as between elementary, high school, and collegiate is not.

The writer has made no alteration of any kind for retardation, or rather repetition. Strayer, in his study of data of the year 1909,[11] estimated sixth grade repetion as 12 per cent., seventh grade 10 per cent., and eighth grade 8 per cent. Since that time the tendency has been for retardation to be reduced. Bonner estimates high school retardation in 1918 to be: First year 7.6 per cent., second 7.1 per cent., third 8.2 per cent., fourth 5.7 per cent., these being the actual figures of 1918 for the state of Connecticut. Repetition in the lowest grades is probably still heavy but the present article presents ratios only from the sixth grade up. Moreover, it seems likely that repetitions in these grades are fully balanced by unreported enrollments not included in the federal figures. Bonner[12] concludes that the true high school enrollment is 17.5 per cent. higher than the total reported to and by the U. S. Bureau of Education.

The totals employed for elementary schools are those of public schools only. In the case of high schools the totals include both public and private secondary schools except for the year 1870, for which private secondary school figures are not available.

Totals for colleges and universities are taken from the annual report of the U. S. Bureau of Education for 1916, Vol. II, page 240. They do not include professional schools nor normal schools, and division B colleges for women are omitted for 1890 and 1904.

Basic figures for European enrollments and populations will be found in the tables prepared by Miss Anna Tolman Smith in the annual report of the U. S. Bureau of Education, 1916, Vol. I, Chapter XXXVII, and are not reproduced in this article (enrollments in Ireland are from *Encyclopedia Britannica*). German secondary schools are of nine or six years, prevalently the former, and the proportion belonging to the upper four years has been estimated as 25.3 per cent., based on the distribution of boys in Prussian higher schools in 1909, as given in Inglis, *Principles of Secondary Education*, page 220 (also in Monroe's *Cyclopedia of Education*, Vol. III, page 84). The Prussian upper year distribution seems not unlike ours, running (in 1909) I, 42.5; II, 24.3; III, 18.2; IV, 14.8. French boys' secondary schools are of seven years and girls' of five years; applying the ratios of boys and girls and assuming the same elimination as in Germany gives a ratio of 52.2 for the upper four years. Possible error is found in the fact that French elimination may be higher or lower, and the totals given may possibly represent eleven years instead of seven, inasmuch as a seven year course is preceded by four years of "elementary" and "preparatory" work, often in the same school. The average length of a secondary school period in England is not definitely known, but is assumed here as six years, though Monroe[13] seems to estimate it at seven. The German elimination figure has been used, giving an English proportion for the upper four years of 50.4. It is possible that the English elimination is more or less than this and that six years is too high or too low an average length.

For other European countries the average length of course in a secondary school is estimated on the basis of data found in Monroe's *Cyclopedia of Education*, and, by using the German elimination ratio, an estimate is made of the proportion found in the upper four years. The lengths of courses in Russia and Ireland are not given in Monroe and are here assumed the same as Germany (in the case of Russia), and the same as in England (in the case of Ireland). The assumed lengths in years and percentages found in the upper four years are for various countries the following: England and Wales 6 (50.4 per cent.), Scotland 5 (66.9 per cent.),

[11] U. S. Bureau of Education Bulletin, 1911, No. 5, *Age and Grade Census of Schools and Colleges*, pages 136.

[12] U. S. Bureau of Education Bulletin, 1920, No. 11, page 29.

[13] Monroe, *Principles of Secondary Education*, page 140.

Ireland 6 (50.4 per cent.), France 7 and 5 (52.2 per cent.), Belgium 7 (37.4 per cent.), Germany 9 or 6 (25.3 per cent.), Austria and Hungary 8 (30.3 per cent.), Switzerland 7 (37.4 per cent.), Netherlands 5 (66.9 per cent.), Denmark and Norway 7 (37.4 per cent.), Sweden 9 (25.3 per cent.), Italy 8 (30.3 per cent.), Spain 6 (50.4 per cent.), Russia 9 (25.3 per cent.), Japan 9 (25.3 per cent.).

It will be seen then that the German figures are the only European ones with any high degree of reliability, and these must be understood as not entirely complete, as they do not include certain vocational schools of secondary grade. From Germany's educational preeminence, however, we may infer much as to the situation throughout western Europe. Because European figures are admittedly incomplete the figures for the United States in this comparison are taken from public high schools alone, omitting private schools. The four year age populations are computed by using the American proportion.

The writer's method of computing percentile ranks in intelligence in the general population and in high schools would require an article to explain. They were based on study of the data in the *Manual of Otis' Group Intelligence Scale*, 1920 Edition, and in Vol. II of *Personnel System of the United States Army*, Adjutant General's Department, Washington.

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EDUCATIONAL EVENTS

THE FEDERAL EDUCATION BILL

Two conferences of leaders of the House Committee on Education were held at Washington on February 28 and March 6 to consider the situation with regard to the Towner-Sterling Bill. At these conferences it was stated authoritatively that the President planned to press the reorganization program, and that he desired that action on the Towner-Sterling Bill be further delayed, pending his recommendations on the reorganization of the executive departments. It was stated that the President had practically conceded the creation of a Department of Education and Welfare. Under these circumstances the conferees decided to delay action on the educational bill now pending before the House Committee on Education until the President had been given more time to formulate and announce his reorganization plans.

The conferences of the members of the House Committee on Education were held in response to demands of the educational forces that the committee make some progress on the education bill. Action on the bill has been delayed for months to await the long-promised report of the chairman of the committee on the reorganization of the government departments. This report has not been made to the reorganization committee, but it is understood to be now in the hands of the President. Supporters of the bill appealed to the House committee because the Senate Committee on Education and Labor has been without a chairman since the resignation of Senator Kenyon.

"In the meantime support of the Towner-Sterling Bill is constantly growing," says a statement issued by the legislative committee of the National Education Association. "Organizations of citizens are being formed in many states to promote public education and secure the passage of the bill. The Department of Superintendence, at its recent meeting in Chicago, reaffirmed its endorsement of the measure by a unanimous vote. When the voters of our country become thoroughly informed regarding the issues involved, the success of our cause will be assured. We have only to demonstrate to Congress that the friends of public education are mightier than its foes."

THE ENGLISH GOVERNMENT'S DECISION ON THE GEDDES REPORT

IN the English House of Commons on March 1 the chancellor of the exchequer announced the decision of the government on the educational proposals of the Geddes committee. As reported upon in the *London Times Educational Supplement* the proposed reduction of £18,000,000 is to be reduced to six-and-a-half millions. Salaries are not to be touched before 1923 in London and 1925 elsewhere; the proposal to reduce the lower age limit is rejected, but larger classes are to be allowed where it is practicable, and the proposal that teachers should contribute 5 per cent. toward superannuation allowances is upheld.

In the discussion in the House Sir Robert Horne, chancellor of the exchequer, said:

The salaries which are paid to the teachers of this country to-day are, for the most part or practically entirely, the result of engagements which have been entered into between the local authorities and the teaching staffs. These engagements subsist in the case of London until 1923, and in the case of the country at large until 1925. Accordingly, whatever view we take as to whether these salaries are too high or too low—the Geddes committee undoubtedly have put on record their opinion that they are too high under modern conditions—it is perfectly certain that the local authorities are under engagements with the teachers which can not be broken without a violation of what is, indeed, a contract, and so far as the government is concerned we can not, and would not, take any action which would have the effect of creating breaches of faith. It is quite certain that any government which took part in what could fairly be regarded as breaking a contract and a breach of faith would set an example in this country which would be followed with serious consequences.

I turn to the other matter in connection with education—namely, the question of the exclusion from school of children under the age of six years. It is perfectly true that in this country we take children into school at an earlier age than in any other country in the world, and it might be contended that in these times of great monetary stringency it would be justifiable to alter that system and prevent children from coming to school at so early an age. But we must all recognize what are the social effects of what we have done. There is no question at all that the health of the children of this country has been immensely improved by the effect of the medical treatment and care which they get at school at those tender years, and at a time like this it would be nothing less than a great injury to very many homes in this country if, where you have women battling with the difficulties of life and trying to support their children, they were forced to keep their children away from school, where at present they get the only mothering and the only attention which is by any chance available. For these reasons the government have felt it impossible to recommend to the House that the proposals of the Geddes committee in this matter should be adopted.

The government's action followed protests from teachers and supporters of education everywhere in Great Britain against the recommendations of the Geddes report. In many of the protests the point was made that the members of the Geddes committee were "shipowners and railwaymen," with no knowledge of education. On this point the *Times Educational Supplement* commented editorially:

The Geddes committee are a body of business men and are not educationists. But they gained as well as suffered from this advantage, for they could see the waste, though they could not fully diagnose the cause. Yet their outlook was not so educationally uninformed as has been widely alleged. They demanded, on the one hand, a great reduction in the cost of elementary education, but were willing, on the other hand, to see in effect a great increase in true secondary education, since they suggested that free secondary education "should be confined to children whose mental calibre justifies it and whose parents can not afford to pay for it."

EDUCATIONAL LEGISLATION IN VIRGINIA

The Virginia legislature which adjourned on March 11 passed three important educational bills. The first provides for a new plan of adopting and distributing text books. The second provides for the county as the unit of school administration, by which the number of school boards of the state is reduced from 643 to 120. The third bill makes education compulsory between the ages of eight and fourteen for public school children during the entire school session, unless the elementary course of study has been completed before fourteen years of age.

Where the school board and tax levying authorities jointly agree, a county or city may be exempted from the provisions of the attendance law. It is understood that a few counties, particularly where the colored population is large, will likely claim exemption. It is nevertheless expected that the provisions of this law will be in full operation throughout the state in a few years.

Reports indicate that the Virginia State Teachers' Association cooperated actively with State Superintendent Harris Hart and other educational leaders in furthering constructive educational legislation and in blocking reac-

tionary legislation during the session of the legislature just closed.

THE COLLEGE ENTRANCE EXAMINATION BOARD

THE total number of candidates taking the examinations of the College Entrance Examination Board during the past year was 18,223, an increase of 2,957 over the preceding year and of 5,507 over 1919, according to the report of the secretary, recently made available. There were 1,724 schools that sent candidates, as compared with 1,434 the previous year, and more than half of them were public schools. Of the total number of candidates 2,713 sought admission to college by the New Plan—nearly five times as many as five years ago.

The report raises the question whether or not the College Entrance Examination Board should be "an instrument for measuring with scientific precision the scholastic and intellectual qualifications of the candidates that take its examinations." The report lists the factors that enter into this problem as follows:

(1) The candidate's previous effort or exertion to master the subject matter as presented to him by his teacher.

(2) The adequacy of the text books studied by the candidate and the competence of his teacher.

(3) The candidate's memory.

(4) The candidate's logical power or ability to reason.

(5) The candidate's constructive or creative power, depending chiefly upon his imagination and intuition.

(6) The candidate's power of expression, depending largely upon his skill in the use of good English.

(7) The candidate's power of concentration, exhibited in part by his composure amid unusual and disturbing conditions.

(8) The candidate's intellectual alertness.

(9) The candidate's facility in writing rapidly and in arranging his work neatly, depending to some extent upon experience acquired at previous examinations.

"Without question it would be very difficult year after year to produce examination papers for which these factors would be invariable," says the report. "It is hardly conceivable that successive committees of examiners in a given subject would attach the same relative importance to memory, ability to reason, originality, power of expression, and skill in planning one's work."

The report discusses correlation between the results of its examinations and school and college grades; fluctuations in examination results; and the possibilities of percentile rankings for candidates. "In June, 1922," says the report, "the secretary hopes to make a beginning by reporting in some subjects at least not only the percentages assigned by the readers but also the grades of the candidates according to percentiles."

AN HONORARY SCHOLARSHIP SOCIETY IN CHINA

AN honorary scholarship society called the Phi Tau Phi has been established with chapters in the leading universities of China. It is to be similar in aims and activities to the Phi Beta Kappa and Sigma Xi societies of American universities. Many of the organizers of the new Phi Tau Phi Society of China are members of the American honorary societies. The purposes of the new society as outlined in the *Phi Beta Kappa Key* are: "To encourage high scholarship and stimulate research among undergraduates, graduates, and faculty of the Chinese universities; to afford a reward for high scholastic accomplishment; and to create ties of mutual interest among the various universities of China."

Eligibility to active membership is determined on the basis of scholastic standing upon graduation from college. Only five per cent. of any class are eligible for membership, which in any case is to be conferred on men of exceptional merit only.

The university presidents, a few faculty members from both the Chinese and foreign staffs, and a few of the most prominent graduates of previous years constitute the charter membership. Honorary members may be selected from among foreigners or Chinese making important contributions to knowledge in China.

The organization is purely an educational society, and chapters are to be established in government, mission and privately endowed institutions.

Chapters have been established in Peking University, Tangshan Government Engineering College, Nanking University, Pei Yang University, Shansi University, St. John's University, Government Institute of Technology (Nanyang), Boone University, West China Union University, Chengtu, Szechuan, Soochow University, and Canton Christian College. Chapters have also been authorized for Hong Kong University, Peking National University, and the new National Southeastern University at Nanking.

A NEW REPORT ON SALARIES OF TEACHERS

ONE third of the public school teachers in cities of 2,500 to 10,000 population are still teaching for less than $1,000 a year, according to City School Circular No. 8, just published by the U. S. Bureau of Education, and one half of the elementary teachers in this group of cities receive less than $1,097 a year. In the group of cities of 10,000 to 25,000 population conditions are somewhat better, but even in this group fifteen per cent. of the teachers receive less than $1,000 a year. In cities of 25,000 to 100,000 population, seven per cent. of the teachers have not advanced to the $1,000 class. In cities of 100,000 or more population comparatively few teachers receive less than $1,200 a year.

EDUCATIONAL NOTES AND NEWS

C. L. WRIGHT, superintendent of schools of Huntington, W. Va., has resigned to engage in business in Huntington. In the course of a long editorial upon the unexpected resignation, the *Herald-Dispatch* of Huntington said: "Mr. Wright, through a combination of qualities including energy, capability, perspective and a capacity for tireless research as to methods, has, during his tenure as head of the Huntington schools, left an impression which will endure for many years."

I. B. GILBERT, for ten years principal of the Union High School of Grand Rapids, Michigan, has been appointed to be superintendent of the School for the Deaf, at Flint, Michigan.

W. A. GREESON, superintendent of schools of Grand Rapids, Mich, has been re-elected at a salary of $8,000.

DISTRIBUTION OF SALARIES OF ELEMENTARY SCHOOL TEACHERS IN 1,444 CITIES

	Cities having a population of 100,000 and over (49 reporting)		Cities having a population of 25,000 to 100,000 (141 reporting)		Cities having a population of 10,000 to 25,000 (286 reporting)		Cities having a population of 2,500 to 10,000 (968 reporting)		Total number of cities reporting, 1,444	
	Teachers	Per cent.	Teachers	Per cent.	Teachers	Per Cent.	Teachers	Per cent.	Teachers	Per cent.
Less than $1,000	742	1.1	1,512	7.3	2,381	14.8	7,077	33.5	11,712	9.2
$1,000-$1,099	795	1.2	1,664	8.1	2,499	15.5	3,594	17.0	8,552	6.7
$1,100-$1,199	990	1.4	1,789	8.1	2,175	13.5	3,166	15.0	8,120	6.4
$1,200-$1,299	3,515	5.1	2,799	13.6	2,419	15.2	2,844	13.5	11,577	9.1
$1,300-$1,399	3140	4.5	3,271	15.9	2,305	14.3	1,941	9.2	10,657	8.4
$1,400-$1,499	5,114	7.5	2,323	11.5	1,742	10.8	1,237	5.9	10,416	8.2
$1,500-$1,599	6,194	8.8	2,634	12.8	1,140	7.1	629	2.9	10,597	8.4
$1,600-$1,699	6,063	8.7	1,816	8.8	646	4.0	299	1.4	8,824	6.9
$1,700-$1,799	5,818	8.3	1,204	5.9	255	1.6	176	.8	7,453	5.8
$1,800-$1,899	4,828	7.1	893	4.3	299	1.4	73	.4	2,023	4.7
$1,900-$1,999	5,697	8.2	337	1.6	131	.9	52	.3	6,217	4.9
$2,000-$2,099	8,987	12.9	242	1.2	88	.5	18	.1	9,335	7.3
$2,100-$2,199	2,104	3.0	102	.5	46	.2	....	....	2,252	1.8
$2,200-$2,299	1,430	2.1	41	2.	14	.1	....	....	1,485	1.2
$2,300-$2,399	1,098	1.6	17	.1	22	.1	....	....	1,137	.9
$2,400 or over	12,867	18.5	27	.1	9	....	....	....	12,903	10.1
Total	69,382	100.0	20,671	100.0	16,101	100.0	21,106	100.0	127,260	100.0
Median	$1,848		$1,379		$1,241		$1,097		$1,524	
Median, not including New York City	$1,676		.....		.....		.....		$1,433	

ALICE LORRAINE DALY, formerly a teacher in the State Normal School, Madison, S. D., is a candidate for governor of South Dakota on the Non-partisan League ticket.

H. H. MECKER, principal of the Douglas and Henry Schools, St. Louis, has been appointed acting associate professor of school supervision at the University of Missouri for the summer session.

PROFESSOR EDMUND A. JONES, of Otterbein College, Westerville, Ohio, was given a silver loving cup by the students on February 10, his eightieth birthday anniversary. Dr. Jones has been in educational work for 60 years, including service for 33 years as superintendent of schools of Massilon, Ohio.

DEAN H. C. MINNICH, of Miami University, has been elected president of the newly-organized teacher training department of the Ohio State Teachers Association.

THE complete list of officers of the Department of Superintendence, National Education Association, as a result of the election at Chicago, is now as follows: President, John H. Beveridge, of Omaha, Neb.; Vice-president, R. G. Jones, of Cleveland; Second Vice-president, Frank W. Ballou, of Washington, D. C.; Treasurer, Ira B. Bush, of Erie, Pa.; Secretary, S. D. Shankland, manager of Andrews Institute, Willoughby, Ohio; Member of Executive Committee, Payson Smith, of Boston, Mass. Executive Committee members holding over from last year are: Jesse H. Newlon, of Denver; Frank Cody, of Detroit; Randall J. Condon, of Cincinnati.

MISS BLANCHE TUCKER, well known in English elementary schools, will retire in July after 31 years of service as senior inspectress of elementary schools, Liverpool Education Committee.

THE United States Bureau of Education will hold an informal commercial education dinner conference, at 6 o'clock, Thursday evening, April 13, at the Hotel Stacy-Trent, Trenton, N. J., in cooperation with the Eastern Commercial Teachers' Association. The topic for discussion will be "College Entrance Credits in Commercial Subjects."

THE department of health and hygiene of the public schools of Columbus, Ohio, has found that 5,221 children are underweight because of malnutrition or other remedial causes. This is 27 per cent. of the total enrollment.

OREGON AGRICULTURAL COLLEGE, Corwalis, Oregon, has a grand total attendance this year of nearly 5,000 students. President Kerr writes that the enrollment of full-time regular students in collegiate courses leading to degrees is 3,488, with 330 in vocational courses in agriculture, home economics and mechanic arts.

THE study of German as an elective subject was restored in the Philadelphia high schools by vote of the Board of Education on March 15.

TRUSTEES of Goucher College have requested the withdrawal of the bill they have been advocating in the Maryland legislature to change the charter of the college.

AT the congregation at Cambridge, England, on March 4, the vice-chancellor was requested to convey the thanks of the University of Cambridge to Princeton University and through President Hibben to Mr. William Cooper Proctor for the establishment at Princeton of a visiting fellowship tenable by a student recommended by the University of Cambridge.

IN an article in the *Boston Evening Transcript* recently, James Ernest King quotes the following excerpt from a dissenting opinion of Mr. Justice James E. Robinson, who was recently elected to the Supreme Court of North Dakota:

> Robinson, J. (dissenting). The purpose of this suit is to compel the county treasurer of Ransom County to annually transmit to the state treasurer from the county tuition fund a sum equal to ten cents for each child of school age. The county treasurer appeals from an order and judgment sustaining a demurrer to the complaint.
>
> The action is based on Chapter 251, Laws of 1913. It is an action to create a teachers' pension fund, and to pension such teachers as may serve for a certain number of years and contribute to the fund a certain percentage of their salary. As there are few who are so stupid as to make of teaching a life business, the chances are that one hundred persons must contribute to the

fund for every person who wins a prize or pension. Hence, the action does in effect provide for a kind of lottery. . . . The conclusion is that the act in question does contravene the Constitution, and it is void.

A study made by Mrs. C. J. Thompson for *South Carolina Education* shows that there were in South Carolina in 1920-1921 4,280 more boys than girls in the primary and grammar grades; 2,191 more girls than boys in the high schools; 31 more women than men in the freshman college classes; 65 more women than men graduated in college. Thirty-six per cent. or 3,600 of every 10,000 of the population of the state in 1920-1921 were enrolled in the public schools; 153 of every 10,000 were enrolled in high schools; 9 of every 10,000 graduated in high school; 24 of every 10,000 entered college; 12 of every 10,000 graduated in college.

Of 42,295 high school students in the State of New Jersey, 16,960, or 27 per cent., are taking French, 10,551, or 17 per cent., are taking Spanish and only 164, or .26 per cent., are taking German, according to the *Modern Language Journal*. As compared with five years ago the gain in French students is 16 per cent. and the gain in Spanish students is 11 per cent. The same journal reports that in Texas 260 high schools are offering Spanish and 59 are offering French.

The International Book Fair, which is in preparation at Florence, Italy, will include an educational section with sub-sections for school books. The sections will include the history of educational literature; public, rural and school libraries and libraries for teachers.

The teachers in the public schools of Benton, Illinois, have formed the Benton Teachers' Federation, No. 186, American Federation of Teachers.

The Cleveland Board of Education provides instruction in lip reading free of charge to citizens who are hard of hearing. Miss Louise Howell is in charge of the classes.

The ninth annual conference of county and city superintendents of Indiana on educational measurements will be held at Bloomington, April 21-22, under the auspices of the School of Education of Indiana University.

The *Utah Educational Review* for March contains resolutions passed by the Board of Regents of the University of Utah upon the death of William Wollerton Riter, president of the Board. Mr. Riter, who was 84 years of age, "coming to Utah in the autumn of 1847, saw the whole of the economic and social development of the state up to the present time, and for years he had a constructive and important share in that development."

Thomas Mott Osborne, penologist and author, has announced that he will establish a boys' preparatory school at Auburn, N. Y., to be known as the Osborne School. Mr. Osborne states that the students will be allowed the fullest possible measure of control.

Approximately 1,000 Spaniards and Italians in New York City have enrolled in English classes organized by the Council on Immigrant Education. This enrollment was the result of a campaign in March, vigorously carried on by means of mass meetings, street meetings, posters, circulars and articles in Spanish and Italian newspapers.

The Carson College for Orphan Girls at Erdenheim, Pa., to which Robert N. Carson, a Philadelphia traction magnate, left one million dollars, will receive in addition $405,625 for the construction of buildings. This balance, found in adjudicating the fourth account of the Carson estate, was awarded by the court to the college.

Regulations to go into effect June 30 have been issued by the secretary of war providing for courses of the Army Correspondence School. The object of the school is set forth as "military training and education by correspondence school methods of the personnel of the Officers' Reserve Corps and civilians who may volunteer for such courses." There will be five courses presenting instruction in tactics and technique of the infantry, cavalry, coast artillery and field artillery.

The Middle West Physical Education Society will hold its annual meeting in Des Moines, Iowa, March 30, 31 and April 1.

SPECIAL REPORTS

UNIVERSITY AND COLLEGE PRACTICE IN MEETING EXPENSES OF ATTENDANCE AT SESSIONS OF LEARNED AND PROFESSIONAL SOCIETIES

IN January of the present year, Swarthmore College took up the question of the payment of expenses incurred by administrative officers and faculty members in attendance upon meetings of professional and learned societies. A committee apointed by President Aydelotte sent out to the 151 colleges and universities on the accepted list of the Association of American Universities a form of inquiry designed to ascertain their practice in this matter. Nearly all the replies evinced a lively interest in the results of the inquiry. To satisfy that interest the following summary is presented:

To date, 116 replies have been received.[1] While it is to be regretted that all the colleges and universities on the accepted list of the Association of American Universities have not replied, the results at hand cover institutions of every type located in all sections of the country. The summary based upon them, therefore, probably includes every form of practice now in use. Unfortunately some of the replies were fragmentary in character. For that reason it is necessary to indicate the number answering each point separately, and in some cases merely to quote the substance of the replies received.

So far as the administrative officers of colleges and universities are concerned it seems to be the universal practice to pay expenses due to their attendance upon meetings of associations of which the colleges and universities are themselves members. When delegates are sent to represent officially a college or university before a public body, as *e. g.*, a legislature or a legislative committee; or at an inauguration, it is also customary to pay expenses. Finally it is the general practice to pay the expenses of administrative officers

[1] The institutions which replied were: Agnes Scott College, Allegheny College, Amherst College, Barnard College, Bates College, Beloit College, Boston University, Bowdoin College, Brooklyn Polytechnic Institute, Brown University, California Institute of Technology, Carthage College, Case School of Applied Science, Catholic University of America, Clark University, Clarkson College of Technology, Colgate University, College of the City of New York, Colorado College, Columbia University, Cornell College, Cornell University, Dartmouth College, De Pauw University, Earlham College, Fordham University, Hamilton College, Hamline University, Harvard University, Haverford College, Hobart College, Illinois Woman's College, Indiana University, Johns Hopkins University, Knox College, Lafayette College, Lake Forest College, Lehigh University, Leland Stanford Jr. University, Marietta College, Massachusetts Institute of Technology, Miami University, Middlebury College, Mills College, Milwaukee-Downer College, Morningside College, Municipal University of Akron, New York University, Northwestern University, Oberlin College, Occidental College, Ohio Wesleyan University, Pennsylvania State College, Pomona College, Princeton University, Purdue University, Radcliffe College, Randolph-Macon Woman's College, Rensselaer Polytechnic Institute, Ripon College, Rockford College, Rose Polytechnic Institute, Rutgers College, Smith College, State College of Washington, Stevens Institute of Technology, Swarthmore College, Trinity College (Hartford, Conn.), Tulane University, University of California, University of Chicago, University of Cincinnati, University of Colorado, University of Georgia, University of Kansas, University of Kentucky, University of Michigan, University of Minnesota, University of Montana, University of Nebraska, University of Nevada, University of North Carolina, University of North Dakota, University of Oklahoma, University of Oregon, University of Pennsylvania, University of Pittsburgh, University of Rochester, University of South Dakota, University of Tennessee, University of Texas, University of Vermont, University of Virginia, University of Washington, University of West Virginia, University of Wisconsin, Vanderbilt University, Vassar College, Wabash College, Washington and Jefferson College, Washington and Lee University, Washington University, Wellesley College, Wells College, Wesleyan University, Western College for Women, Western Reserve University William Jewell College, Williams College, Worcester Polytechnic Institute, Yale University.

(presidents, deans, librarians, etc.) who attend sessions of their professional societies. In the latter case the practice is based upon the conviction that the administrative officers who attend such meetings receive training in the most progressive methods employed in their work, the benefit of which accrues largely to the institution employing them.

In most cases the sums employed for the above purposes are not large, either relatively or absolutely. Nevertheless some of the replies reveal the fact that they are under criticism. Particularly is this the case when the institution is under public management and it is necessary to include items of this character in the budget. From one large western state university the following characteristic comment was received:

> Owing to the cutting of our budget for maintenance by the legislature we are obliged to adhere more literally than ever to the policy of paying no traveling expenses except where actual university business is transacted. Of course we sometimes let men go to scientific meetings to look up instructors or for other purposes, but our paying expenses has to be camouflaged. I regret that we are not permitted to take a more liberal attitude.

Usually it is easier to secure appropriations for travel within the state, as, for example, to meetings of the state teachers' association, than for meetings held outside the state. One northwestern state has enacted a law designed to limit the use of public funds in this connection. (Montana, Ch. 241, L. 1921.)

In many of the replies received an attempt is made to draw a line sharply between attendance upon official meetings or meetings of associations in which the college or university is itself a member on the one hand, and, on the other hand, meetings of scientific or learned societies in which individuals, usually of faculty rank, are members. To carry out this distinction in practice is admittedly a matter of some difficulty. While virtually all the 116 answers received to the Swarthmore questionnaire indicate payment of expenses in the first of the above cases, only 51 of them, or 44 per cent., show that the institution restricts itself to compensation of this character exclusively.

Most of the 51 institutions which thus make no provision for the payment of the expenses of faculty members frankly recognize the desirability of so doing and plead poverty as an excuse. In the case of certain smaller far western institutions the high, not to say prohibitive, cost of travel to eastern cities is mentioned as standing in the way of establishing plans of this character. On the other hand a few colleges and universities located in or near large eastern cities state that they have not provided for compensation in the case of faculty members because few of the latter are compelled to travel long distances to attend meetings of learned societies. It is possible that a few, but certainly a very few, universities make no such provision because they regard the salaries paid as sufficient to enable faculty members to attend meetings of learned societies as frequently as they should. However, no university replying to the questionnaire makes this statement in so many words. On the other hand one publicly supported eastern institution which does pay all expenses, including hotel bills, of faculty members of higher rank reports that: "Salaries are low and attendance at important meetings is very desirable. If salaries can be raised appropriately this item might be reduced."

Let us turn now to the 65 colleges and universities (56 per cent. of the number replying), which provide compensation in some form for attendance by faculty members other than deans or administrative officers at sessions of societies primarily learned or scientific in character. Twenty-eight of these have instituted plans of a fairly definite or at least customary character, although not more than seven or eight have drawn up printed rules and forms. For the most part the practice is of recent origin and it has been growing rapidly. Fifteen colleges and universities have begun it within the last five years. On the other hand, New York University and the State College of Washington instituted it twenty years ago;

Case School of Applied Science and Dartmouth, fifteen years ago; Rose Polytechnic, twelve years ago; the University of Texas and Washington University (St. Louis), ten years ago; Williams College, nine years ago; Wells College and Western College for Women, eight years ago.

In most of the institutions which have installed the plan during the last five or six years, it is admittedly experimental. The increase in cost of living since the outbreak of the World War, particularly of transportation and hotel rates, and the failure of professors' salaries to keep pace therewith have undoubtedly contributed greatly to the widespread adoption of the plan. Three colleges report that the plan was inaugurated by special gifts from members of the board or friends of the college which have been continued from year to year subsequently. In four institutions and probably in several others there is no general appropriation, but some compensation for traveling expenses is granted out of departmental funds. One large midwestern, privately supported college, which for some time had a fund for "outside representation" out of which the expenses of faculty members attending meetings of scientific and learned societies were paid in part, states that "it has been obliged, however, on account of the extraordinary pressure on our budget for the last two years, to abandon this policy for the present, but we hope to return to it before long." A small eastern college, which for several years has paid straight railway fares to meetings east of the Mississippi river, writes that "in the near future it is possible that this rather generous treatment will have to be curtailed, and may take the form of paying one-way railway fares." While the plan thus rests upon a somewhat uncertain basis in many institutions, there is a virtually universal desire to maintain it.

Fifty colleges answered the inquiry regarding the eligibility of all ranks and grades of the faculty to the benefits accruing from such funds. Thirty-six of these admit faculty members of all grades, the others limiting compensation to heads of departments, full professors, or other ranks down to instructor. One large eastern university pays the expenses of "important members of the faculty," a discrimination which would doubtless be of interest to the unimportant members of its faculty, if there are any such. The desirability of encouraging younger men to attend meetings of scientific and learned societies does not seem to be generally recognized. However, Brown University deliberately tips the balance in their favor by the following rule:

> In case of professors and associate-professors, $15 (the approximate fare to New York) shall be deducted before the apportionment is calculated. In the case of assistant-professors and instructors, the percentage of apportionment shall be calculated on the total fare (exclusive of Pullman and meals).

In fifteen out of thirty colleges answering the inquiry "who designates individual representatives to attend sessions of learned and professional societies and consequently to receive compensation?" it was stated that this power was in the hands of the president of the college. Most of these answers made it clear, however, that the president consulted deans, heads of departments or professors before making his decision. In addition to the fifteen answers of this character the following replies were made: President and trustees, one institution; president and heads of departments, two institutions; president and faculty committee, three institutions; the deans, one institution; departments or department heads, four institutions; faculty committee, four institutions.

Thirty-six colleges and universities base the compensation allowed upon railroad fares, 16 specifically including Pullman fares. The percentage paid varies from 10 per cent. in one case to 50 per cent. in six cases; 60 to 70 per cent. in four cases, and 100 per cent. in 25 cases. Evidently these percentages fluctuate from year to year in acordance with the funds available and the extent of travel. Several institutions fix an upper limit for individuals, for example, Smith College, $50; the University of Texas, $100. Fourteen institutions pay all or a part of hotel bills also, two of them contributing a per-diem of $4 toward expenses of this kind.

It is not the general practice to make com-

pensation depend upon the reading of papers or participation in discussions at meetings of learned societes. Out of 41 institutions answering this question only eight stated this as a condition. Curiously enough, one of the eight makes it a requirement in the case of instructors but not in the case of faculty members of higher rank. Of the 33 institutions which did not make this requirement, however, fully one half indicated that preference was given to faculty members who were officers of the associations or who were to read papers or take part in discussions.

The total amounts expended by various institutions during the year 1920-21 for attendance at meetings of learned and professional societies seem modest in proportion to their size and location. With few exceptions they cover the expenses both of administrative officials and of faculty members. This is not the case, however, with Smith College which had a fund of $1,000 utilized by 36 members of the faculty, nor with Brown University, which had a fund of $600 utilized by 34 members of the faculty.[2]

Of the institutions reporting the total sum expended two spent less than $200; eight from $200 to $500; ten from $500 to $1,000; four from $1,000 to $1,500, and eight over $1,500. With two exceptions the latter were large institutions in the far west. One of these reported a total appropriation of $5,200; three others total appropriations of $3,000 each.

Nineteen institutions reported figures from which the average amount received per person may be stated as follows: in three institutions, under $25; in three others, from $25 to $50; in seven, from $50 to $100; in six, over $100. Here again the progression is largely from east to west.

One or two details with regard to the administration of such funds may be of interest. Other things being equal a professor who has received the maximum compensation during one year will not be preferred during the following year over a colleague who has stayed at home. Western institutions will not readily send a man to Boston or New York if by waiting a year there is a likelihood that the scientific association of which he is a member will hold its meeting at Chicago or some other western city.

In general the attitude of American colleges and universities toward this plan may be described as cautious and experimental withal, but decidedly friendly so far as their experience goes. One criticism from a far-western university should be quoted:

> We have endeavored to be helpful in sending members of the faculty to various meetings. In general I think it is not a good policy for members of the faculty to depend upon the university to send them to meetings of national organizations to which they belong. Careful choice should be made in each case so that there will not be developed a tradition that the university cannot expect representation unless it pays the traveling expenses of the member of the faculty. Such an attitude would be most unfortunate.

It may be conceded that the attitude described would be "unfortunate." One is tempted to inquire whether it has developed among administrative officers who for years have had all expenses of "outside representation" paid. Certainly it is not so likely to occur in the case of faculty members who receive a percentage only of railroad fares in most cases. Assuming that this reaches 50 per cent.—which it will do only in the more favored cases,—nevertheless the burden personally assumed by the professor will still be a heavy one in these days of inadequate salaries and high prices. Academic joy-riding can hardly develop under these conditions.

Occasionally in faculty circles opposition is manifested to the compensation plan on the ground that money appropriated for this purpose will be taken out of funds available for salaries. In the last analysis this is almost certain to be the case. It would be deplorable, however, if the compensation plan should be used as an argument against increasng salaries. In practice the sums received by individual professors as part compensation for expenses are so small that it would be ludicrous to urge them as an offset against salary increases. The

[2] The sum voted by the corporation at Brown University for 1919-20, the first year of the plan, was $500. In 1920-21, this was increased to $600; and for the present year to $1,000.

very existence of the compensation plan presupposes salaries inadequate to permit sufficient attendance at meetings of learned societies, and is therefore a standing argument for salary increases. Since compensation under this plan nearly always involves an excess expenditure on the part of a professor it is a little difficult to consider what he receives as a temporary increase in his salary. Even looking at it in this way, however, it would be a salary increase earned and justified by effort on his part to increase his professional efficiency.

Among all the institutions replying to the Swarthmore inquiry, Brown University seems to have developed the compensation plan in the most intelligent and promising manner. In his annual report to the Corporation of the University for 1919-20, President W. H. P. Faunce discusses the subject as follows:

> In order to promote attendance of the faculty at the annual meetings of learned societies, $500 was appropriated by the corporation to assist in paying the traveling expenses of various professors in attending such meetings during the Christmas holidays. The faculty appointed its own committee to distribute this modest subvention, and through their allotments fifteen professors were aided in attending meetings in which they and their departments of study were vitally concerned. These meetings were held at Ithaca, Cleveland, Ann Arbor, Chicago, St. Louis and Toronto, and the stimulus given and received was of incalculable value. No man can teach to-day effectively unless he is in personal touch with his colleagues in other institutions, is submitting his own achievements to their scrutiny, and acquainting himself with the latest methods pursued and results attained by other institutions. It is doubtful if any other five hundred dollars expended by the university did so much good as this appropriation for attendance at the annual meetings. I am glad to quote from the report of the faculty committee: "The university and each department has a right to insist that members of the staff attend, at least occasionally, the meetings of the learned societies which are charged with the larger literary, scientific, or educational aspects of the work of their departments, and that they have some small share in the national development of their subject. The sum generously set aside by the corporation has been a real boon in these days of increased cost of traveling" . . . . At the faculty meeting it was voted to extend to the corporation the thanks of the faculty for the appropriation.

In conclusion it may be of interest to note that the Board of Managers of Swarthmore College, influenced in part by the above facts and figures, has decided to establish a plan of partial compensation for the benefit of faculty members of all ranks. For this purpose a sum of $375 was appropriated to cover the period from the beginning of the Christmas vacation to the end of the college year 1921-22, and of $750 for the college year 1922-23. This fund is to be administered by a faculty committee with the approval of the president of the college. It is hoped that it will prove sufficient to pay half the cost of railroad travel including Pullman fares, and a per-diem of $4 toward the hotel expenses of all faculty members attending sessions of learned societies.

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EDUCATIONAL RESEARCH AND STATISTICS

THE DESCRIPTION OF THE PERFORMANCES OF PUPILS ON EXERCISES OF VARYING DIFFICULTY

IT has been pointed out that the exercises of an examination set by the teacher are not equal in difficulty. It has been shown that the percentage of pupils answering the exercises correctly varies widely for most examinations.[1] In describing the performances of pupils on ordinary examinations it is customary to give the same weight to all questions or to adopt arbitrary weights which are not in close agreement with the actual difficulty of the questions. It has been pointed out that this practice of giving equal credit for exercises differing in difficulty introduces an error in the resulting score or grade.

The use of exercises of various degrees of

[1] Monroe, W. S., *Measuring the Results of Teaching*, Houghton-Mifflin Company, page 10.

Thorndike, E. L., *Mental and Social Measurements*, Teachers College, Columbia University, page 8.

difficulty also occurs in standardized educational tests. In some cases the exercises are selected on a basis other than that of difficulty and it is desirable to use those that have been selected. In the construction of scaled performance tests the exercises are selected on the basis of difficulty and they range from very easy to very difficult. Under certain conditions, it is possible to describe the performance of a pupil in terms of the level of difficulty which he reaches with a certain standard of accuracy. The procedure for doing this involves some rather intricate statistical methods, even when the tests are accompanied by appropriate tables and detailed directions. It is hardly to be expected that such tests can ever become widely used by teachers, because, in addition to the fact that the scoring is difficult to understand, it also requires considerable time.

Several attempts have been made to devise a simple method of securing accurate descriptions of the performances of pupils on exercises of varying difficulty. Weights based upon difficulty have been assigned to the exercises, but such a plan, when it includes a large number of exercises, makes the scoring of an examination laborious. For example, if there are as many as 15 exercises and the weights are expressed to one decimal place, the scorer has a real exercise in addition in computing the score of each paper. Even when the number of exercises is less, the summation of credits is no small task in the scoring of a large number of papers.

The question naturally arises whether it is necessary to express these weights to one decimal place. Investigations reveal that, in general, the scores of pupils are changed only slightly if the weights are expressed to the nearest integer. This materially decreases the labor of counting up a pupil's score, but even yet the scoring of a large number of test papers seems to some test makers more laborious than need be. The question has been raised whether the weighting of the exercises materially affects the relative magnitude of the scores given to the pupils. Unweighted scores, *i. e.*, scores based on the assumption that equal credit should be given for doing each of the exercises, regardless of their difficulty, have been compared with weighted scores. It is found that unweighted scores and weighted scores correlate very highly.

In the Virginia Survey a spelling test was constructed by taking one word from each of 20 consecutive columns of the Ayres Spelling Scale. Thus, words which gradually increased in difficulty were secured. These words were weighted by assigning a value of one to the first, of two to the second, and so on, with the twentieth word having a value of 20. The pupil's score was taken as the sum of the weights of the words spelled correctly.

Under the present writer's direction, this spelling test was given to 306 fifth grade pupils in one school system. The performances of the pupils were described according to the rules used in the Virginia Survey. They were also described by giving one credit for each word spelled correctly. This assumes that the same credit should be given for the different words. The coefficient of correlation between weighted scores and unweighted scores for this group was .96 $\pm$ .0038. In the same school system the test was given to 184 seventh grade pupils and the coefficient of correlation between the weighted and unweighted scores for this group was found to be .97 $\pm$ .0050.

The coefficient of correlation expresses only a general relationship. These coefficients approach perfect correlation closely and indicate that there is close agreement between the two sets of scores. We may also express the closeness of this relation in terms of the probable error of estimate.[2] For the fifth grade group it is 10.4 in terms of the weighted scores and .57 for the unweighted scores. The standard error of estimate for the unweighted scores means that, if the weighted scores were reduced to the same scale as that of the unweighted scores so that equivalent scores would be identical in magnitude, 50 per cent. of the pupils would receive scores which differ from each other by no more than .57. Since the unweighted scores are in terms of the number of words

[2] The formula for the probable error of estimate is $\text{P.E.}_{\text{Est}_x} = .6745\sigma_x\sqrt{1 - r^2_{12}}$

spelled correctly, for half of the pupils the maximum limit of the differences between the scores by the two methods is approximately one half of a word. Thus, approximately 75 per cent. of the pupils would receive identical scores by the two methods. In the seventh grade the standard errors of estimate are 10.2 and .50.

Thus it is seen that in this case it makes very little difference which of these two methods of scoring is used. The error introduced by giving the same credit for all words is slight. Incidentally it may be noted that the reliability coefficient of this test is probably no greater than .75 for these groups of pupils. For this degree of reliability, which is high for a twenty word test, the probable error of measurement[3] is approximately 10.0 for the weighted scores and 0.5 for the unweighted. Thus the difference between the two methods of scoring is no greater than the probable error of measurement.

In his scales for history and general science, Van Wagenen computes a pupil's score in terms of the level of difficulty which he reaches with 50 per cent. accuracy. Although he has greatly simplified the procedure by providing appropriate tables, it is not easy to understand and it requires considerable time after one has become familiar with the directions. General History Scale A and General History Scale B were given to a group of pupils. The test papers were scored both according to the directions given by Van Wagenen and also in terms of the number of exercises answered correctly.[4] Scale A was given to 36 pupils and scale B to 34. The coefficient of correlation between the regular scores and the unweighted scores was found to be .87 ± .028 for scale A and .91 ± .021 for scale B. For scale A the probable error of estimate in terms of the regular score is 2.9. In terms of the number of exercises done correctly it is 2.1. For scale B the probable errors of estimate are 2.6 and 2.1, respectively. Thirty-one of these pupils took both scale A and scale B. The coefficient of correlation between the two sets of the Van Wagenen scores is .78 ± .04. The probable variable error of measurement is 1.2. Although the probable error of estimate is approximately twice as large as the probable error of measurement, it is not likely that the description of a pupil's performance on this test, in terms of the number of exercises done correctly, introduces serious errors. Considering the magnitude of the variable probable error of measurement, it would appear that one would be entirely justified in using the simpler method of describing the pupil's performance.

Similar studies for other tests yielded the same sort of results. Charters[5] reports for his language and grammar tests that coefficients of correlation of 90 or above were obtained between weighted and unweighted scores. He felt justified in discarding the weights which had already been calculated, inasmuch as these tests included over 40 items and the calculation of a pupil's score involved considerable labor.

These facts do not necessarily mean that scores in terms of the number of exercises done correctly are as accurate descriptions of the performances of pupils as weighted scores or scores in terms of the level of difficulty reached. The facts, however, do show very clearly that the differences between weighted and unweighted scores are slight; and, since it is doubtful whether weighted scores are more accurate, it seems to be justifiable to describe the performances of pupils in terms of the number of exercises done correctly.

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[3] This is computed by the formula, $P.E._m = .6745\sigma\sqrt{1-r_{12}}$.

[4] In this test the pupil is asked to check a list of statements giving those that are in agreement with a paragraph that he has read. A pupil may make errors in two ways. He may check a statement that is not true and he may fail to check a statement that is true. He may also do an exercise correctly in two ways, either by checking true statements or by not checking statements which are untrue.

[5] Charters, W. W., Constructing Language and Grammar Scales, *Journal of Educational Research*, 1: 255, April, 1920.

FRANK VICTOR THOMPSON[1]—AN APPRECIATION

Few superintendents have faced more difficult problems than Superintendent Thompson faced when he became superintendent in Boston. The School Board as well as the teaching and supervisory staff were not united. But Mr. Thompson brought to this position a background of rich and valuable professional experience, a thorough educational training, a professional vision and a personality, that served him well. Few if any superintendents have achieved more in a brief period of three years than Superintendent Thompson accomplished in Boston. He left a united professional staff, and an undivided public opinion, organized for the advancement of Boston's educational interests.

When Mr. Thompson became superintendent he was not only thoroughly familiar with the Boston school system but he was also well acquainted, from actual experience, with the problems of the teacher, of the elementary and high school principals and of the supervisors. This unusually large and varied background of experience made it possible for him to deal with the great mass of business which came to his office with remarkable insight and thorough understanding.

Mr. Thompson was a thorough student of education to the end that he might serve better the great cause in which he was enlisted. No one knows, except those who were intimately associated with him, how untiringly he devoted himself to the work of his position. After office hours, during holiday periods, and even during his brief summer vacations he was planning a better school system for Boston.

Mr. Thompson possessed the essential characteristics of an efficient educational leader. In personality and in educational vision he was an inspiration to those associated with him. He possessed clear vision of what an efficient school system should be. He was a good judge of men, recognizing their limitations and their strength, and assigning to each in accordance with his capacity to serve. He was generous in his praise of the achievements of those associated with him; in their accomplishments he rejoiced, and found his own personal satisfaction. He did nothing selfishly. He succeeded to a remarkable degree in uniting the school forces and the public under his leadership.

Mr. Thompson possessed an unusual personality and made friends easily. He was genial, sympathetic and warmhearted, and impressed all who came in contact with him with his courtesy, unselfish purposes, his sense of fairness, and his intellectual strength and vigor. While he was impulsive, he was never rash. Although he was aggressive, active, positive, and alert, nevertheless, in reaching educational conclusions he was deliberate, considerate and judicious. He held his position in high esteem, and looked upon his office not as a means of increasing hs own personal prestige, but as an opportunity for him to render service to his city, to his state, and to the coming generation. His sole ambition was to meet fully the responsibilities of his office and to take advantage of the unusual opportunities to serve which the position offered.

The outstanding characteristic of the life of Frank V. Thompson is service. He studied systematically, both in private and in institutions, in order the better to fit himself to serve. He entertained no thought of personal advantage for himself, but always looked forward to larger opportunities to render educational service. By his untimely passing the educational profession has lost a brilliant leader who had not reached the climax of his possibilities. His educational record is one of unusual achievement. His brief life of personal sacrifice in order to prepare for a life of professional service is an inspiration. Boston, the Comonwealth of Massachusetts, and indeed the nation, have lost a commanding educational leader. Many outstanding features of the Boston school system are monuments to the educational philosophy and unusual vision of Superintendent Thompson. He gave his life in the development of an efficient school system, and thereby made himself the benefactor of all future generations.

Frank W. Ballou
Public Schools, Washington, D. C.

[1] Died October 23, 1921.